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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,182	11/01/2003	Klaus K. Allmendinger	INN100US	1027
35083	7590	06/30/2005	EXAMINER	
CHARLES D. GAVRILOVICH, JR., GAVRILOVICH, DODD & LINDSEY, LLP 985 PASEO LA CRESTA, SUITE B CHULA VISTA, CA 91910-6729			LARKIN, DANIEL SEAN	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

ES -

Office Action Summary	Application No. 10/699,182	Applicant(s) ALLMENDINGER, KLAUS K.	
	Examiner Daniel S. Larkin	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 42-70 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 68 and 70 is/are allowed.
- 6) ☒ Claim(s) 1, 44, 45, 48, and 65 is/are rejected.
- 7) ☒ Claim(s) 2-12, 42, 43, 45-64, 66, 67 and 69 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8 April 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 08 April 2004 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein, specifically DE 19800027 and DE 19636226, have not been considered.

Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

3. The drawings are objected to because reference numeral "240", as shown in Figure 3, should be relabeled -- 204 --.

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4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

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6. The disclosure is objected to because of the following informalities:

Page 5, paragraph [0020], line 3: The "period" after the term "however" should be replaced with a -- comma --; and the term "It" should be corrected to read -- it --.

Page 5, paragraph [0020], line 10: The negative current representation "-Ip" should be corrected to read -- (-Ip) --.

Page 5, paragraph [0020], line 15: The positive current representation "Ip" should be corrected to read -- (Ip) --. Appropriate correction is required.

Claim Objections

7. Claims 1-12, 49-56, 60-64, 66, 67, 69 are objected to because of the following informalities:

Re claim 1, claim line 5: The conjunction -- and -- should be inserted after the term "cell".

Re claim 3, claim lines 1 and 2: The phrase "the current managing *device*" lacks antecedent basis. A current managing "unit" has been previously recited.

Re claim 4, claim lines 1 and 2: The phrase "the current managing *device*" lacks antecedent basis.

Re claim 9, claim line 3: The article -- the -- should be inserted prior to the term "inverting".

Re claim 9, claim line 3: The term -- circuit -- should be inserted after the term "amplifier".

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Re claim 49, claim lines 1 and 2: The phrase "the current managing *device*" lacks antecedent basis. A current managing "unit" has been previously recited.

Re claim 50, claim lines 1 and 2: The phrase "the current managing *device*" lacks antecedent basis.

Re claim 50, claim lines 4 and 8: The phrase "the oxygen sensor cell" lacks antecedent basis.

Re claim 55, claim line 2: The article -- the -- should be inserted prior to the term "inverting".

Re claim 55, claim line 3: The term -- circuit -- should be inserted after the term "amplifier"

Re claim 60, claim line 3: The phrase "the oxygen sensor cell" lacks antecedent basis.

Re claim 63, claim lines 4 and 5: The phrase "the upper threshold" lacks antecedent basis.

Re claim 64, claim lines 4-5: The phrases "the positive constant pump current", "the negative constant pump current", and "the oxygen sensor cell" lack antecedent basis.

Re claim 66, claim lines 1 and 2: The phrase "the current managing *device*" lacks antecedent basis.

Re claim 67, claim lines 1 and 2: The phrase "the current managing *device*" lacks antecedent basis.

Re claim 69, claim lines 1 and 2: The phrase "the current managing device" lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 44, 45, 48, and 65 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 63-75553 (Toshiyuki).

With respect to the limitations of claim 1, the reference to Toshiyuki discloses an oxygen concentration detector, comprising: an oxygen sensor cell for providing an output signal in accordance with an oxygen concentration of a gas within a measuring cell; a pump cell for adjusting an oxygen ion flow between the measuring cell and ambient air in accordance with a pump current flowing through the pump cell; and a current managing unit for varying the pump current between a first constant current and a second constant current in accordance with the output signal, see abstract and Figure 1.

With respect to the limitations of claim 44, the reference to Toshiyuki discloses an oxygen concentration detector, comprising: a current managing unit configured to receive an output signal based on an oxygen concentration of a gas within the measuring cell and to adjust an oxygen ion flow between the measuring cell and

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ambient air by varying, in accordance with the output signal, and a pump current flowing through a pump cell of the measuring cell between a first constant current and a second constant current, see abstract.

With respect to the limitation of claim 45, the reference to Toshiyuki discloses that the output signal is produced by an oxygen sensor cell of the measuring cell.

With respect to the limitation of claim 48, the reference to Toshiyuki discloses that the apparatus is connected to a fuel supply for a combustion engine.

With respect to the limitations of claim 65, the reference to Toshiyuki discloses an oxygen concentration detector, comprising: a sensor connector configured to connect to a measuring cell and receive an output signal based on an oxygen concentration of a gas within a measuring cell, the output signal produced by an oxygen sensor cell of the measuring cell; and a current managing unit configured to adjust an oxygen ion flow between the measuring cell and ambient air by varying, in accordance with the output signal, a pump current flowing through a pump cell of the measuring cell between a first constant current and a second constant current, see abstract.

Allowable Subject Matter

10. The following is a statement of reasons for the indication of allowable subject matter:

Prior art was not relied upon to reject claims 2-12, 42, 43, 46, 47, 49-64, and 66-70 because the prior art fails to teach and/or make obvious the following:

Claims 2-12, 42, 43, 46, 47, 49-64, 66, and 67: Providing an apparatus comprising a computing device configured to determine the oxygen concentration of a gas based on a pulse width ratio of a square wave of a pump current in combination with all of the limitations of the base claim.

Claims 68 and 69: Providing an apparatus configured to connect to a measuring cell, the apparatus comprising: a current managing unit; and a computing device configured to determine an oxygen concentration of the gas based on a pulse width ratio of a square wave of the pump current in combination with all of the remaining limitations of the claim.

Claim 70: Providing an apparatus configured to connect to a measuring cell and to determine an oxygen concentration of a gas within the measuring cell, the apparatus comprising: a current managing unit configured to vary a pump current flowing through a pump cell of the measuring cell; and a computing device configured to determine the oxygen concentration of the gas by comparing the pulse width ratio to a pulse width ratio function for the measuring cell in combination with all of the remaining limitations of the claim.

Conclusion


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Larkin
AU 2856
27 June 2005



DANIEL S. LARKIN
PRIMARY EXAMINER